

LIST OF ACRONYMS AND ABBREVIATIONS

AAC	Arizona Administrative Code
AADT	annual average daily traffic
AC	alternating current
ACC	Arizona Corporation Commission
ADA	Arizona Department of Agriculture
ADEQ	Arizona Department of Environmental Quality
ADOT	Arizona Department of Transportation
ADT	average daily traffic
ADWR	Arizona Department of Water Resources
AEPCO	Arizona Electric Power Company
AGFD	Arizona Game and Fish Department
AIRFA	<i>American Indian Religious Freedom Act</i>
AMA	Active Management Area
AMSL	above mean sea level
ANPL	Arizona Native Plant Law
APE	area of potential effects
APP	Aquifer Protection Permit
AQCR	Air Quality Control Region
ARS	Arizona Revised Statutes
AZSITE	Arizona Online Database of Archaeological Projects and Sites
BA	Biological Assessment
BE	Biological Evaluation
BEA	U.S. Bureau of Economic Analysis
BLM	Bureau of Land Management
BMP	Best Management Practices
BPA	Bonneville Power Administration
CAA	<i>Clean Air Act</i>
CEQ	Council on Environmental Quality
CFE	Comisión Federal de Electricidad
CFR	Code of Federal Regulations
CWA	<i>Clean Water Act</i>
DHS	U.S. Department of Health Services
DNL	Day-Night Average Sound Level

DOE	U.S. Department of Energy
DOE-FE	DOE Office of Fossil Energy
DOT	U.S. Department of Transportation
EIS	Environmental Impact Statement
ELF	extremely-low-frequency
EMA	Ecosystem Management Area
EMF	electric and magnetic field
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPCRA	<i>Emergency Planning and Community Right-to-Know Act</i>
EPNG	El Paso Natural Gas
EPRI	Electric Power Research Institute
ESA	<i>Endangered Species Act</i>
FAA	Federal Aviation Administration
FLPMA	<i>Federal Land Policy and Management Act</i>
FEMA	Federal Emergency Management Agency
Forest Plan	<i>Coronado National Forest Land and Resource Management Plan</i>
FR	<i>Federal Register</i>
GIS	Geographic Information Systems
HDMS	Heritage Data Management System
IBA	Important Bird Area
IRA	inventoried roadless area
MBTA	<i>Migratory Bird Treaty Act</i>
MIS	U.S.F.S. Management Indicator Species
MSA	Metropolitan Statistical Area
NAAQS	National Ambient Air Quality Standards
NAGPRA	<i>Native American Graves Protection and Repatriation Act</i>
NEPA	<i>National Environmental Policy Act</i>
NFMA	<i>National Forest Management Act</i>
NHPA	<i>National Historic Preservation Act</i>
NIEHS	National Institute of Environmental Health Sciences
NOI	Notice of Intent
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSR	New Source Review
NWI	National Wetlands Inventory

NWS	National Weather Service
OSC	Oil Spill Contingency
OSHA	Occupational Safety and Health Administration
PDEQ	Pima County Department of Environmental Quality
PILT	Payments in Lieu of Taxes
PNM	Public Service Company of New Mexico
PSD	Prevention of Significant Deterioration
PTS	Payments to States
RA	Roads Analysis of the Coronado National Forest
RCRA	<i>Resource Conservation and Recovery Act</i>
ROD	Record of Decision
ROG	reactive organic gases
ROI	region of influence
ROS	USFS Recreation Opportunity Spectrum
ROW	right-of-way
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SMS	USFS Scenery Management System
SPCC	Spill Prevention Countermeasure and Control
TCP	Traditional Cultural Property
TEP	Tucson Electric Power Company
TRICO	TRICO Electric Cooperative, Inc.
TSP	total suspended particulates
USACE	U.S. Army Corps of Engineers
USC	United States Code
USFS	U.S. Department of Agriculture Forest Service
USFWS	U.S. Department of the Interior, Fish and Wildlife Service
USGS	U.S. Department of the Interior, Geological Survey
USIBWC	U.S. Section of the International Boundary and Water Commission, U.S. and Mexico
VOC	volatile organic compounds

CHEMICALS AND UNIT ABBREVIATIONS

A	amperes
ac-ft	acre foot or acre feet
AM	amplitude modulation
bcf	billion cubic feet
bsg	below surface grade
C°	Celsius
cf/hr	cubic feet per hour
CO	carbon monoxide
dB	decibel
dBA	weighted sound levels
F°	Fahrenheit
FM	frequency modulation
gm	gram
gpm	gallons per minute
ha	hectares
Hz	hertz
km	kilometer
kV	kilovolt
lbs	pounds
µg/m ³	micrograms per cubic meter
m	meter
mG	milligauss
mg/L	milligrams per liter
mi	miles
MMscf	million standard cubic feet
mmcf	million cubic feet
mtpy	metric tons, or tonnes, per year
MVA	million volt-amperes
MW	megawatt
NO ₂	nitrogen dioxide
NO _x	oxides of nitrogen
O ₃	ozone
PM _{2.5}	particulate matter with an aerodynamic diameter less than or equal to 2.5 microns
PM ₁₀	particulate matter with an aerodynamic diameter less than or equal to 10 microns
Pb	lead

ppb	parts per billion
ppm	parts per million
psig	pounds per square inch gauge
SO ₂	sulfur dioxide
tpy	tons per year
v	volts
yr	year
μT	microtesla

CONVERSION CHART

To Convert Into Metric			To Convert Into English		
If You Know	Multiply By	To Get	If You Know	Multiply By	To Get
Length					
inch	2.54	centimeter	centimeter	0.3937	inch
feet	30.48	centimeter	centimeter	0.0328	feet
feet	0.3048	meter	meter	3.281	feet
yard	0.9144	meter	meter	1.0936	yard
mile	1.60934	kilometer	kilometer	0.62414	mile (Statute)
Area					
square inches	6.4516	square centimeter	square centimeter	0.155	square inch
square feet	0.092903	square meter	square meter	10.7639	square feet
square yard	0.8361	square meter	square meter	1.196	square yard
acre	0.40469	hectare	hectare	2.471	acre
square mile	2.58999	square kilometer	square kilometer	0.3861	square mile
acre-foot	1233.48	cubic meters	cubic meters	0.00081	acre-foot
Volume					
fluid ounce	29.574	milliliter	milliliter	0.0338	fluid ounce
gallon	3.7854	liter	liter	0.26417	gallon
gallon	0.0039	cubic meter	cubic meter	256.14	gallon
cubic feet	0.028317	cubic meter	cubic meter	35.315	cubic feet
cubic yard	0.76455	cubic meter	cubic meter	1.308	cubic yard
Weight					
ounce	28.3495	gram	gram	0.03527	ounce
pound	0.45360	kilogram	kilogram	2.2046	pound
short ton	0.90718	metric ton	metric ton	1.1023	short ton
Force					
dyne	0.00001	newton	newton	100,000	dyne
Temperature					
Fahrenheit	Subtract 32 then multiply by 5/9ths	Celsius	Celsius	Multiply by 9/5ths, then add 32	Fahrenheit

METRIC PREFIXES

Prefix	Symbol	Multiplication Factor
exa-	E	1 000 000 000 000 000 000 = 10^{18}
peta-	P	1 000 000 000 000 000 = 10^{15}
tera-	T	1 000 000 000 000 = 10^{12}
giga-	G	1 000 000 000 = 10^9
mega-	M	1 000 000 = 10^6
kilo-	k	1 000 = 10^3
hecto-	h	100 = 10^2
deka-	da	10 = 10^1
deci-	d	0.1 = 10^{-1}
centi-	c	0.01 = 10^{-2}
milli-	m	0.001 = 10^{-3}
micro-	μ	0.000 001 = 10^{-6}
nano-	n	0.000 000 001 = 10^{-9}
pico-	p	0.000 000 000 001 = 10^{-12}
femto-	f	0.000 000 000 000 001 = 10^{-15}
atto-	a	0.000 000 000 000 000 001 = 10^{-18}

GLOSSARY

Acre-foot: The volume of water that will cover an area of 1 acre to a depth of 1 foot (326,000 gallons, 1,233.5 cubic meters).

Advisory Council on Historic Preservation: A body appointed to advise the President and Congress in the coordination of actions by Federal agencies on matters relating to historic preservation. This organization participates in NHPA Section 106 consultations that are controversial or precedent setting.

Aeolian: Borne, deposited, produced, or eroded by the wind.

Aesthetics: Referring to the perception of beauty.

Affected environment: Existing biological, physical, social, and economic conditions of an area subject to change, both directly and indirectly, as the result of a proposed human action.

Air pollutant: An airborne substance that could, in high enough concentrations, harm living things or cause damage to materials. From a regulatory perspective, an air pollutant is a substance for which emissions or atmospheric concentrations are regulated or for which maximum guideline levels have been established due to potential harmful effects on human health and welfare.

Air Quality Control Region (AQCR): Geographic subdivisions of the United States established to regulate pollution on a region or local level. Some regions span more than one state.

Air Quality Standards: The level of pollutants prescribed by regulation that may not be exceeded during a specified time in a defined area.

Alluvial deposits: Earth, sand, gravel, and other materials carried and deposited by moving surface water.

Ambient air: Any unconfined portion of the atmosphere; open air, surrounding air. That portion of the atmosphere, external to buildings, to which the general public has access.

Amperes: Measure of the flow of electric current; source of a magnetic field.

Aquifer: A body of rock or sediment in a formation, group of formations, or part of a formation that is saturated and sufficiently permeable to transmit economic quantities of water to wells and springs.

Archaeological sites (resources): Any location where humans have altered the terrain or discarded artifacts during either prehistoric or historic times.

Archaeology: A scientific approach to the study of human ecology, cultural history, and cultural process.

Artifact: An object produced or shaped by human workmanship of archaeological or historical interest.

Attainment area: An area which the EPA has designated as being in compliance with one or more of the NAAQS for sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, lead, and particulate matter. Any area may be in attainment for some pollutants but not for others.

Atmospheric dispersion: The dispersion of particulates or gaseous species (such as air pollutants) into the troposphere. It is a function of wind and atmospheric stability.

Background noise: The total acoustical and electrical noise from all sources in a measurement system that may interfere with the production, transmission, time averaging, measurement, or recording of an acoustical signal.

Blading: The use of a steel blade or steel fork attachment on a tracked or rubber-tired vehicle that removes vegetation through a combination of pushing and/uplifting motions.

Candidate species: Plants and animals for which the U.S. Fish and Wildlife Service has sufficient information on biological vulnerability and threats to justify proposing to add them to the threatened and endangered species list, but cannot do so immediately because other species have a higher priority for listing.

Capacity: The load for which a generator, turbine, transformer, transmission circuit, apparatus, station, or system is rated. Capacity is also used synonymously with capability.

Carbon monoxide (CO): A colorless, odorless gas that is toxic if breathed in high concentrations over a period of time. It is formed as the product of the incomplete combustion of hydrocarbons (fuel).

Class I, II, and III Areas: Area classifications, defined by the Clean Air Act, for which there are established limits to the annual amount of air pollution increase. Class I areas include international parks and certain national parks and wilderness areas; allowable increases in air pollution are very limited. Air pollution increases in Class II areas are less limited, and are least limited in Class III areas. Areas not designated as Class I start out as Class II and may be reclassified up or down by the state, subject to Federal requirements. Specified Federal lands, including certain national parks and wilderness areas, are mandatory Class I areas and may not be redesignated to another classification. All other PSD areas of the country are designated Class II areas. Currently there are no Class III areas.

Clean Air Act (CAA): (42 USC 7401 et seq.) Establishes (1) national air quality criteria and control techniques (Section 7408); (2) National ambient air quality standards (Section 7409 defines the highest allowable levels of certain pollutants in the ambient air. Because EPA must establish the criteria for setting these standards, the regulated pollutants are called criteria pollutants); (3) state implementation plan requirements (Section 4710); (4) Federal performance standards for stationary sources (Section 4711); (5) national emission standards for hazardous air pollutants (Section 7412); (6) applicability of CAA to Federal facilities (Section 7418), (Federal Agency must comply with Federal, state, and local requirements respecting control and abatement of air pollution, including permit and other procedural requirements, to the same extent as any person); (7) Federal new motor vehicle emission standards (Section 7521); (8) regulations for fuel (Section 7545); (9) aircraft emission standards (Section 7571).

Clean Air Act Conformity Requirement: Section 176 (c) of the CAA requires Federal agencies to ensure that their actions conform to applicable implementation plans (in most cases, the SIP) for achieving and maintaining the National Ambient Air Quality Standards (NAAQS) for criteria pollutants.

Clean Water Act (CWA): (33 U.S. Code 1251 et seq.) Establishes requirements for (1) technology-based effluent limitations (Section 301); (2) water quality-based effluent limitations (Section 302); (3) individual control strategies for toxic pollutants (Section 304[I]); (4) new source performance standards (Section 306); (5) regulation of toxics (Section 307); (6) Federal facilities' pollution control (provisions for presidential exception) (Section 313); (7) thermal discharges (Section 316); (8) permits under the NPDES (Section 402); (9) permits for the discharge or dredged or fill materials into navigable waters (Section 404).

Climatology: The science that deals with climates and investigates their phenomena and causes.

Code of Federal Regulations (CFR): All Federal regulations in force are published in codified form in the Code of Federal Regulations.

Community (biotic): All plants and animals occupying a specific area under relatively similar conditions.

Conductor: Transmission line wire strung between transmission line structures to transmit electricity from one location to another.

Corona effect: Electrical breakdown of air into charged particles. It is caused by the electric field at the surface of conductors.

Council on Environmental Quality (CEQ): Established by NEPA. CEQ regulations (40 CFR Parts 1500-1508) describe the process for implementing NEPA, including preparation of environmental assessments and environmental impact statements, and the timing and extent of public participation.

Criteria pollutant: An air pollutant that is regulated by the NAAQS. The EPA must describe the characteristics and potential health and welfare effects that form the basis for setting or revising the standard for each regulated pollutant. Criteria pollutants are sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, lead, and particulate matter.

Critical habitat: Habitat essential to the conservation of an endangered or threatened species that has been designated as critical by the U.S. Fish and Wildlife Service following the procedures outlined in the *Endangered Species Act* and its implementing regulations (50 CFR 424). See endangered species and threatened species.

Cultural resources: Districts, sites, structures, and objects and evidence of some importance to a culture, a subculture, or a community for scientific, traditional, religious, and other reasons. These resources and relevant environmental data are important for describing and reconstructing past lifeways, for interpreting human behavior, and for predicting future courses of cultural development.

Cumulative impact: The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.17).

Current: Flow of electrical charge.

Decibel (dB): A unit for expressing the relative intensity of sounds on a logarithmic scale from zero for the average least perceptible sound to about 130 for the average level at which sound causes pain to humans. For traffic and industrial noise measurements, the A-weighted decibel (dBA), a frequency-weighted noise unit, is widely used. The A-weighted decibel scale corresponds approximately to the frequency response of the human ear and thus correlates well with loudness.

Deposition: In geology, the laying down of potential rock-forming materials; sedimentation. In atmospheric transport, the settling out on ground and building surfaces of atmospheric aerosols and particles (“dry deposition”) or their removal from the air to the ground by precipitation (“wet deposition” or “rainout”).

Direct embedment: Type of pole installation that requires excavation of a shaft wider than the pole using a caisson-drilling rig and then subsequent backfilling around the pole.

Distance zones: The relative visibility from travel routes or observation points.

Double-circuit: Two sets of lines (circuits) on a single tower (a single circuit consists of three conductors).

Drinking water standards: The prescribed level of constituents or characteristics in a drinking water supply that cannot be legally exceeded.

Ecology: A branch of science dealing with the interrelationships of living organisms with one another and with their nonliving environment.

Ecosystem: A community of organisms and their physical environment interacting as an ecological unit.

Effects: As used in NEPA documentation, the terms effects and impacts are synonymous. Effects can be ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health; effects can be direct, indirect, or cumulative. Effects include both beneficial and detrimental impacts.

Effluent: A waste stream flowing into the atmosphere, surface water, groundwater, or soil. Most frequently the term applies to wastes discharged to surface waters.

Elevation: Height above sea level.

Eligible cultural resource: A cultural resource that has been evaluated and reviewed by an agency and the SHPO and recommended as eligible for inclusion in the National Register of Historic Places, based on the criteria of significance. The criteria of significance consider American history, architecture, archaeology, engineering, and culture. The criteria require integrity and association with lives or events, distinctiveness for any of a variety of reasons, or importance because of information the property does or could hold.

Embedment: See direct embedment.

Emissions: Pollution discharged into the atmosphere from smoke stacks, other vents, and surface areas of commercial or industrial facilities, residential chimneys, and vehicle exhausts.

Emission Standards: Requirements established by a state, local government, or the EPA Administrator that limit the quantity, rate, or concentration of emissions of air pollutants on a continuous basis.

Endangered Species: Plants or animals that are in danger of extinction throughout all or a significant portion of their ranges and that have been listed as endangered by the USFWS or the National Marine Fisheries Service following the procedures outlined in the Endangered Species Act and its implementing regulations (50 CFR Part 424). Some states also list species as endangered.

Endangered Species Act (ESA): (16 U.S. Code 1531 et seq.) Provides for listing and protection of animal and plant species identified as in danger, or likely to be in danger, of extinction throughout all or a significant portion of their range. Section 7 places strict requirements on Federal agencies to protect listed species.

Environmental Impact Statement (EIS): The detailed written statement that is required by section 102(2)(C) of NEPA for a proposed major Federal action that may significantly affect the quality of the human environment. A DOE EIS is prepared in accordance with applicable requirements of the CEQ NEPA regulations in 40 CFR Parts 1500-1508 and DOE NEPA regulations in 10 CFR Part 1021. The statement includes, among other information, discussions of the environmental impacts of the proposed action and all reasonable alternatives, adverse environmental effects that cannot be avoided should the proposal be implemented, the relationship between short-term uses of the human environment and enhancement of long-term productivity, and any irreversible and irretrievable commitments of resources.

Environmental Justice: An identification of potential disproportionately high and adverse impacts on low-income and/or minority populations that may result from proposed Federal actions (required by Executive Order 12898).

Environmental Protection Agency (EPA): The independent Federal Agency, established in 1970, that regulates Federal environmental matters and oversees the implementation of Federal environmental laws.

Energy: That which does or is capable of doing work. It is measured in terms of the work it is capable of doing; electric energy is usually measured in kilowatt-hours.

Ephemeral stream: A stream that flows only after a period of heavy precipitation.

Erosion: Wearing away of soil and rock by weathering and the actions of surface water, wind, and underground water.

Ethnographic: Information about cultural beliefs and practices.

Fault: A fracture or a zone of fractures within a rock formation along which vertical, horizontal, or transverse slippage has occurred.

Field effect: Induced currents and voltages as well as related effects that might occur as a result of electric and magnetic fields at ground level.

Floodplain: The lowlands adjoining inland and coastal waters and relatively flat areas, including at a minimum that area inundated by a 1 percent or greater chance flood in any given year. The base floodplain is defined as the 100-year (1 percent) floodplain. The critical action floodplain is defined as the 500-year (0.2 percent) floodplain.

Flow: The volume of water passing a given point per unit of time. Same as streamflow.

Formation: In geology, the primary unit of formal stratigraphic mapping or description. Most formations possess certain distinctive features.

Generation: The act or process of producing electricity from other forms of energy.

Generator: A machine that converts mechanical energy into electrical energy.

Groundwater: Water within the earth that supplies wells and springs.

Groundwater basin: Subsurface structure having the character of a basin with respect to collection, retention, and outflow of water.

Hazardous Air Pollutants (HAP): Air pollutants that are not covered by ambient air quality standards, but that may present a threat of adverse human health effects or adverse environmental effects. They are regulated under Section 112 of the *Clean Air Act*. See also National Emissions Standards for Hazardous Air Pollutants.

Hazardous waste: A category of waste regulated under RCRA. To be considered hazardous, a waste must be a solid waste under RCRA and must exhibit at least one of four characteristics described in 40 CFR 261.20 through 40 CFR 261.24 (i.e., ignitability, corrosivity, reactivity, or toxicity) or be specifically listed by EPA in 40 CFR 261.31 through 40 CFR 261.33.

Historic properties: Under the NHPA these are properties of national, state, or local significance in American history, architecture, archaeology, engineering, or culture that are worthy of preservation.

Impacts (effects): In this EIS, as well as in the CEQ regulations, the word impact is used synonymously with the word effect. See effects.

Indirect impacts: Effects that are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

Infrastructure: The basic installations and facilities on which the continuance and growth of a community or state (e.g., roads, schools, power plants, transportation, communication systems) are based.

Intensity (of an earthquake): A measure of the effects (due to ground shaking) of an earthquake at a particular location, based on observed damage to structures built by humans, changes in the earth's

surface, and reports of how people felt the earthquake. Earthquake intensity is measured in numerical units on the Modified Mercalli scale. See Modified Mercalli Intensity scale and magnitude of an earthquake.

Intertie: A transmission line that links two or more regional electric power systems.

Interested parties: Those groups or individuals that are interested, for whatever reason, in the project and its progress. Interested parties include, but are not limited to, private individuals, public agencies, organizations, customers, and potential customers.

Invasive species: An alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health. “Alien species” means, with respect to a particular ecosystem, any species, including its seed, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem.

Invertebrate: Animals characterized by not having a backbone or spinal column, including a wide variety of organisms such as insects, spiders, worms, clams, and crayfish.

Isolated occurrence: A grouping of less than ten archaeological artifacts or a single undatable feature. These often consist of redeposited material of questionable locational context that are not related to nearby archaeological sites.

Kilovolt (kV): The electrical unit of power that equals 1,000 volts.

Lacustrine deposits: Deposits found or formed in lakes.

Landscape: An area composed of interacting ecosystems that are repeated because of geology, land, soils, climate, biota, and human influences throughout the area. Landscapes are generally of a size, shape, and pattern which is determined by interacting ecosystems.

Lithic: A stone artifact that has been modified or altered by human hands.

Load: The amount of electric power required at a given point on a system.

Loam: A rich, permeable soil composed of a mixture of clay, silt, sand, and organic matter.

Low-income population: A population that is classified by the U.S. Bureau of the Census 2000 as having an aggregated mean 1999 income level for a family less than \$17,463. This level is adjusted through the poverty index using a standard of living percentage change where applicable.

Magnitude (of an earthquake): A quantity characteristic of the total energy released by an earthquake, as contrasted to “intensity,” which describes its effects at a particular place. Magnitude is calculated using common logarithms (base 10) of the largest ground motion. A one-unit increase in magnitude (for example, from magnitude 6 to magnitude 7) represents a 30-fold increase in the amount of energy released. Three common types of magnitude are Richter (or local) (ML), P body wave (mb), and surface wave (Ms).

Maintenance area: Area redesignated as attainment within the last 10 years under the CAA. See attainment area.

Major source: Any stationary source or group of stationary sources in which all of the pollutant- emitting activities emit, or have the potential to emit, 100 or more tons per year of any regulated air pollutant, 10 tons per year of a single HAP, or combined HAP emissions exceeding 25 tons per year.

Mammal: Animals in the class *Mammalia* that are distinguished by having self-regulating body temperature, hair, and in females, milk-producing mammary glands to feed their young.

Management Indicator Species (MIS): Species selected by the USFS for monitoring and analysis because their population changes are believed to indicate the effects of management activities

Megawatt (MW): The electrical unit of power that equals 1 million watts or 1 thousand kilowatts.

Mesa: An isolated relatively flat-topped natural elevation.

Meteorology: The science dealing with the dynamics of the atmosphere and its phenomena, especially relating to weather.

Mineral: Naturally occurring inorganic element or compound.

Minority Population: Individual(s) who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic are minorities (CEQ 1997). CEQ identifies these groups as minority populations when either (1) the minority population of the affected area exceeds 50 percent or (2) the minority population percentage in the affected area is meaningfully greater than the minority population percentage in the general population or appropriate unit of geographical analysis.

Mitigation: The alleviation of adverse impacts on environmental resources by avoidance through project redesign or project relocation, by protection, or by adequate scientific study. Mitigation includes: (1) avoiding an impact altogether by not taking a certain action or parts of an action; (2) minimizing impacts by limiting the degree or magnitude of an action and its implementation; (3) rectifying an impact by repairing, rehabilitating, or restoring the affected environment; (4) reducing or eliminating the impact over time by preservation and maintenance operations during the life of an action; or (5) compensating for an impact by replacing or providing substitute resources or environments.

Modified Mercalli Intensity Scale: The Modified Mercalli Intensity Scale is a standard of relative measurement of earthquake intensity, developed to fit construction conditions in most of the United States. It is a 12-step scale, with values from I (not felt except by a very few people) to XII (damage total).

National Ambient Air Quality Standards (NAAQS): Standards defining the highest allowable levels of certain pollutants in the ambient air. Because EPA must establish the criteria for setting these standards, the regulated pollutants are called criteria pollutants. The criteria pollutants are sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, lead, and particulate matter. See *Clean Air Act*.

National Environmental Policy Act (NEPA): (42 USC 4341, passed by Congress in 1969) NEPA established a national policy designed to encourage consideration of the influences of human activities (e.g., population growth, high-density urbanization, industrial development) on the natural environment. NEPA also established the CEQ. NEPA procedures require that environmental information be made available to the public before decisions are made. Information contained in NEPA documents must focus on the relevant issues in order to facilitate the decision-making process.

National Historic Preservation Act (NHPA): (16 USC 470) Provides for an expanded National Register of Historic Places (NRHP) to register districts, sites, buildings, structures, and objects significant to American history, architecture, archaeology, and culture. Section 106 requires that the President's Advisory Council on Historic Preservation be afforded an opportunity to comment on any undertaking that adversely affects properties listed in the NRHP.

National Pollutant Discharge Elimination System (NPDES) Permit: Federal regulation (40 CFR Parts 122 and 125) that requires permits for the discharge of pollutants from any point source into the waters of the United States regulated through the *Clean Water Act*.

National Register of Historic Places (NRHP): A list maintained by the Secretary of the Interior of districts, sites, buildings, structures, and objects of prehistoric or historic local, state, or national

significance. The list is expanded as authorized by Section 2(b) of the *Historic Sites Act* of 1935 (16 U.S.C. 462) and Section 101(a)(1)(A) of the *National Historic Preservation Act*.

Native American: Person culturally identified with a tribe that is indigenous to the United States and who belongs to a federally recognized tribe consulted on TEP's proposed project.

Native vegetation: Plant life that occurs naturally in an area without agricultural or cultivation efforts. It does not include species that have been introduced from other geographical areas and have become naturalized.

Noise: Unwanted or undesirable sound, usually characterized as being so loud as to interfere with, or be inappropriate to, normal activities such as communication, sleep, or study. (See background noise.)

Non-attainment area: An area that EPA has designated as not meeting one or more of the NAAQS for criteria pollutants. An area may be in attainment for some pollutants, but not others.

Noxious weed: Invasive plant species regulated under Federal or state law. See invasive species.

Obligate species: Plant species that almost always occur in wetlands (i.e., greater than 99 percent of the time).

Ozone (O₃): The triatomic form of oxygen. In the upper atmosphere, ozone protects the earth from the sun's ultraviolet rays, but in the lower levels of the atmosphere, ozone is considered an air pollutant. In the lower atmosphere, ozone is formed primarily from a photochemical reaction between nitrogen oxides and volatile organic compounds. Small amounts of ozone can be formed from corona effects on transmission lines.

Particulate Matter: Any finely divided solid or liquid material, other than uncombined pure water.

Peak capacity: The maximum capacity of a system to meet loads.

Peak demand: The highest demand for power during a stated period of time.

Permeability: The ability of rock or soil to transmit a fluid.

pH: A measure of the relative acidity or alkalinity of a solution, expressed on a scale from 0 to 14, with the neutral point at 7.0. Acid solutions have pH values lower than 7.0, and basic (i.e., alkaline) solutions have pH values higher than 7.0. Because pH is the negative logarithm of the hydrogen ion (H⁺) concentration, each unit increase in pH value expresses a change of state of 10 times the preceding state. Thus, pH 5 is 10 times more acidic than pH 6, and pH 9 is 10 times more alkaline than pH 8.

PM_{2.5}: Airborne particulate matter with an aerodynamic diameter less than or equal to 2.5 microns; regulated under the NAAQS.

PM₁₀: Airborne particulate matter with an aerodynamic diameter less than or equal to 10 microns; regulated under the NAAQS.

Prehistoric: Of, relating to, or existing in times antedating written history. Prehistoric cultural resources are those that antedate written records of the human cultures that produced them.

Present value: The worth of future returns or costs in terms of their current value. To obtain a present value, an interest rate is used to discount these future returns and costs.

Prevention of Significant Deterioration (of air quality) (PSD): Regulations established to prevent significant deterioration of air quality in areas that already meet NAAQS. Among other provisions,

cumulative increases in sulfur dioxide, nitrogen dioxide, and PM₁₀ levels after specified baseline dates must not exceed specified maximum allowable amounts.

Prime farmland: Soil types with a combination of characteristics that make them particularly productive for agriculture.

Public Involvement Plan: Methodology used by the agency to encourage public participation.

Quaternary: A subdivision of geological time (the Quaternary period) including roughly the last two million years up to the present.

Raptor: Birds of prey including various types of hawks, falcons, eagles, vultures, and owls.

Record of Decision (ROD): A concise public document that records a Federal agency's decision concerning a proposed action for which the agency has prepared an EIS. The ROD is prepared in accordance with the requirements of the CEQ NEPA regulations (40 CFR 1505.2). A ROD identifies the alternatives considered in reaching the decision, the environmentally preferable alternatives, factors balanced by the agency in making the decision, whether all practicable means to avoid or minimize environmental harm have been adopted, and if not, why they were not.

Reliability: The ability of the power system to provide customers uninterrupted electric service. Includes generation, transmission, and distribution reliability.

Region of Influence (ROI): The geographical region that would be expected to affect a specific resource in some way by the proposed action and/or alternative(s).

Right-of-way (ROW): An easement for a certain purpose over the land of another, such as a strip of land used for a transmission line, roadway or pipeline.

Riparian: Of or pertaining to the bank of a river, stream, lake, or other water bodies.

Runoff: The portion of rainfall, melted snow, or irrigation water that flows across the ground surface and may eventually enter streams.

Saturated zone: The zone in which the voids in the rock or soil are filled with water at a pressure greater than atmospheric pressure. The water table is the top of the saturated zone in an unconfined aquifer.

Scenery Management System (SMS): Visual resource tool used by USFS for the inventory and analysis of aesthetic values of national forest lands as outlined in *Landscape Aesthetics: A Handbook for Scenery Management*.

Scoping: An early, open part of the NEPA process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action.

Section 106 process: A NHPA (16 U.S.C. §470 et seq.) review process used to identify, evaluate, and protect cultural resources eligible for nomination to the NRHP that may be affected by Federal actions or undertakings.

Sediment: Material deposited by wind or water.

Sedimentation: The process of deposition of sediment, especially by mechanical means from a state of suspension in water.

Seismic: Pertaining to any earth vibration, especially an earthquake.

Sensitive species: Those plants and animals identified by the USFS Regional Forester for which population viability is a concern, as evidenced by significant current or predicted downward trend in populations or density and significant or predicted downward trend in habitat capability.

Socioeconomics: The social and economic condition in the study area.

Solid waste: In general, solid wastes are non-liquid, non-soluble discarded materials ranging from municipal garbage to industrial wastes that contain complex and sometimes hazardous substances. Solid wastes include sewage sludge, agricultural refuse, demolition wastes, and mining residues.

State Historic Preservation Officer (SHPO): The official within each state, authorized by the state at the request of the Secretary of the Interior, to act as liaison for purposes of implementing the NHPA.

Step-up transformer: Transformer in which the energy transfer is from a low- to a high-voltage winding or windings. (Winding means one or more turns of wire forming a continuous coil for a transformer, relay, rotating machine, or other electric device.)

Stratigraphic: Of, relating to, or determined by stratigraphy; the superposition of layers (soil, rock, and other materials) often observed at archaeological sites.

Substation: Facility with transformers where voltage on transmission lines changes from one level to another.

Surface water: All bodies of water on the surface of the earth that are open to the atmosphere, such as rivers, lakes, reservoirs, ponds, seas, and estuaries.

Switchyard: Facility with circuit breakers and automatic switches to turn power on and off on different transmission lines.

Tap: To tie a substation into an existing transmission line through a connection.

Tap Point: The point where two transmission lines interconnect.

Tesla: Unit of measurement of magnetic field.

Threatened species: Any plants or animals that are likely to become endangered species within the foreseeable future throughout all or a significant portion of their ranges and which have been listed as threatened by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service following the procedures set out in the *Endangered Species Act* and its implementing regulations (50 CFR Part 424).

Traditional Cultural Property/Use Area: Areas of significance to the beliefs, customs, and practices of a community of people that have been passed down through generations.

Transformer: A device for transferring energy from one circuit to another in an alternating-current system. Its most frequent use in power systems is for changing voltage levels.

Transmission line: The structures, insulators, conductors, and other equipment used to transfer electrical power from one point to another.

Tribe: A federally recognized American Indian political entity. All those consulted in TEP's proposed project are collectively termed the "tribes," even though many are Nations or Communities. DOE and cooperating agencies recognize that each tribe is an individual, sovereign nation with a unique trust relationship to the U.S. government.

Vertebrate: Animals that are members of the subphylum Vertebrata, including the fishes, amphibians, reptiles, birds, and mammals, all of which are characterized by having a segmented bony or cartilaginous spinal column.

Volatile Organic Compounds (VOCs): A broad range of organic compounds that produce vapors at relatively low temperatures, such as gasoline and solvents.

Volt: The unit of voltage or potential difference. It is the electromotive force which, if steadily applied to a circuit having a resistance of one ohm, will produce a current of one ampere.

Voltage: Potential for an electric charge to do work; source of an electric field.

Water rights: Permits or licenses issued by the State Water Resources Control Board.

Watt: The absolute meter-kilogram-second unit of power equal to the work done at the rate of one joule per second or to the power produced by a current of one ampere across a potential difference of one volt.

Wetland: An area that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, and similar areas.

Yield: A measure of the availability of water to meet authorized purposes, sometimes defined in terms of the ability to meet project needs within specific time periods.